

NORTH AMERICAN SPECIES OF THE SUBGENUS
SCOTOPHILELLA DUDA (DIPTERA,
BORBORIDAE)*

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Introduction

Scotophilella is the largest subgenus in the genus *Leptocera*. Species of this subgenus have a distinct apical bristle on middle tibia but lack the preapical bristle. Although these characters are very important many of the older descriptions do not state whether these bristles are present or not. Where the writer has not had access to type material the determination of some of these older species proved quite difficult.

Unless otherwise designated the types of the new species are placed in the A. L. Melander collection. This is one of a series of papers on the family Borboridæ.

Scotophilella Duda

Duda: Abhand. Zool.-Botan. Ges. Wien. X. I. 34 (1918).

Wings hyaline or browned, rarely distinctly pictured; cross-veins more widely separated; interfrontal bristles well developed; eyes large or small, if small the eyes are bare and never so small that they occupy less than half the height of head from vertex to vibrissal angle; antennæ more or less divergent, never opposed; second section of costa usually more than one-third as long as third; last section of third vein straight or but slightly curved up on last section; apical bristle on middle tibia, usually distinct.

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* Contribution from the Division of Entomology of the Washington Agricultural Experiment Station, State College of Washington.

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*Genotype of
 Linosina
 May 1835
 which are
 Scotophilella
 Jma*

39. Entire front and cheeks grayish pollinose; face shining black, yellow between antennæ; interfrontal bristles hair-like, in three pairs, the anterior two pairs cruciate; last section of third vein slightly bent forward on basal third and again on apical third; middle tibial bristles weak; halteres black. Fig. 2.....**luctuosa**, new species
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Leptocera (*Scotophilella*) **varicosta** Malloch.

Malloch: Trans. Am. Ent. Soc. 40 (1914).

Costa Rica.

The writer has three specimens from Mexico, Motzorongo, Vera Cruz (Osborn); Utuado, Porto Rico (Busck); and Plummers Isl. Md. (Schwarz) which agree quite well with Malloch's description of *L. varicosta* but have the cheeks a little more than half as high as long diameter of eye while Malloch's description reads "cheeks about as high as eye." Since they agree in all other respects they are undoubtedly *L. varicosta* Mall.

Leptocera (*Scotophilella*) **mirabilis** Collin. (Fig. 21.)

Collin: Ent. Mag. XIII. 59 (1902). (*Limosina*)

Knab and Malloch: Psyche. 19. 199 (1912). (*Limosina*)

Small subshining black species. Front more than two times as broad as deep, shining black; the divergent stripes and lower

front slightly reddish, opaque; interfrontal bristles in four pairs, the anterior pair reduced; ocellar tubercle present; ocelli distinct; antennæ divergent, the third joint browned, but little larger than the second, with whitish pubescence; artista a little less than three times antennal length, with long pubescence; face deeply concave in profile; carina well developed between the antennæ; anterior margin of epistome curved up; clypeus narrowly visible from in front; eyes rather small, occupying but little more than one-half of the height of the head from vertex to oral margin; cheeks one-half eye-height. Mesonotum with two pairs of dorsocentral bristles, the anterior pair indistinct; scutellum opaque, posterior margin rounded; disc bare; marginal bristles four. Wings hyaline; veins brown; costa ending at third vein, second and third sections nearly equal; penultimate section of fourth vein one and one-half times as long as outer crossvein and little shorter than the basal section of third vein; third vein straight on its last section, ending near wing-tip. Legs brown with coxæ, trochanters and tarsi yellow; hind tibia armed with a long spur; hind metatarsi but little thickened, nearly as long as the next joint. Length 1-1.5 mm.

Described from a female specimen from Flathead Lake, Montana, collected by Melander, Aug. 19, 1916.

Fourteen specimens from Pullman, Wash., Goose Isl. Conn., Boston, Mass. (Melander), and Illinois (Ill. Univ.).

Leptocera (*Scotophilella*) *levifrons*, new species. Fig. 13).

Entirely black. Front broad, convex, with frontal triangle, upper portion of fronto-orbital stripes and interfrontal stripes shining; interfrontal bristles reduced, in four pairs, uniform in size, not cruciate; face slightly carinate, concave in profile; clypeus very narrowly visible from in front; carina between the antennæ well developed; cheeks slightly browned, at vibrissal angle, two-thirds as high as eye; buccæ with three irregularly arranged setæ; oral setæ weak; eyes small, but little more than half as high as head from vertex to mouth margin; antennæ divergent, moderate in size; third joint rounded, larger than second, arista two times antennal length, with short weak pubescence. Mesonotum with two pairs of dorsocentral bristles, the anterior pair considerably weaker than the posterior; acrostichal setulæ numerous, not arranged in regular rows; upper sternopleuræ with bristles setæ-like, the anterior weaker than the posterior; scutellum triangular, marginal bristles four, the anterior pair weaker than

the posterior. Abdomen short, one-half as long as the thorax, second segment as long as the next two. Legs with numerous short stiff hairs; middle femora with one anterior preapical seta; middle tibiæ with three extensor bristles arranged as follows: one a little before middle and two at near apex; hind metatarsi two-thirds as long as next joint. Wings slightly smoky; costa black; other veins brown; costa ending considerably beyond third vein, all sections subequal, first section short ciliate; last section of second vein abruptly curved up at apex, ending beyond outer crossvein and two and one-fourth times as long as basal section of third vein; penultimate sections of third and fourth veins equal and two times outer crossvein; last section of third vein curved down at middle, ending near wing-tip, fourth vein traceable to wing-margin, discal cell rather long and narrow, outer angle long appendiculate. Length, 1.5 mm.

Type.—Male: Kendrick, Idaho, June 7, 1917 (Melander).

Paratypes.—Four specimens from the following localities: Washington: Lake Cushman, Ilwaco, Vashon and Union Flat (Melander).

Leptocera (*Scotophilella*) *gracilipennis*, new species. (Fig. 10).

Opaque piceous. Front two times as broad as deep, with the frontal triangle, the orbital stripes and the narrow interfrontal stripes fuscous, slightly shining; lower front distinctly ridged in the middle; interfrontal bristles reduced, in four uniform pairs, not cruciate; fronto-orbital bristles directed outward, the lower weaker than the upper; orbital setulæ weak, not extending above the upper fronto-orbital bristle; ocelli prominent; antennæ divergent, not widely separated; arista three times antennal length, with dense pubescence; face and cheeks fuscous; face deeply concave in profile, marked with two horizontal black bands, one just below carina and one on anterior margin; carina developed between the antennæ only; clypeus narrowly visible from in front; eyes rather small, occupying but little more than half the height of the head from vertex to mouth margin; facets distinct; cheeks, from vibrissal angle to lower margin of eye, three-fourths as high as eye; buccal setæ three in number, upcurved, the anterior seta bristle-like and much stronger than the other two; oral setulæ distinct. Mesonotum broad; dorsocentral bristles in two pairs, the anterior pair very weak; acrostichal setulæ short, arranged in eight rows between the anterior pair of dorsocentral bristles; posthumeral bristle absent; scutellum quadrangular, disc bare; marginal bristles four, the anterior pair much weaker than the posterior; pleuræ dark fuscous with sutures yellow. Abdomen short, two-thirds as long as thorax; second segment very much elongated, as long as the next three. Legs pale brown with coxæ and trochanters yellowish; middle femora with a single anterior preapical setæ; middle tibiæ with three extensor bristles one on basal third, and two on apical third; hind metatarsi thickened, two-thirds

as long as the second joint. Wings narrowed apically, whitish; costa black, other veins pale brown to yellow; costa produced beyond third vein, first section short ciliate, equal to third and three-fourths as long as second; basal section of third vein a little less than one-third as long as the last section of second vein, two-thirds as long as the distance between crossveins and two times outer crossvein; last section of third vein straight, ending near wing-tip; fifth vein ending abruptly a short distance from outer crossvein. Halteres with a yellow stem and pale brown knob. Length, 1.5–1.75 mm.

Type.—Male: Friday Harbor, Wash. (Melander).

Paratypes.—Four specimens from the following localities: Idaho: Moscow (Melander). Illinois: (Ill. Univ.). Massachusetts: Boston (Melander).

Leptocera (*Scotophilella*) **cellularis**, new species. (Fig. 12).

Opaque black. Front convex, almost twice as deep with the setigerous stripes and frontal triangle shining; divergent stripes velvety black; bristles of vertex and occiput rather weak; fronto-orbital bristles weak, divergent, the lower two-thirds as long as upper; orbital setulæ numerous, minute, hair-like, extending above upper fronto-orbital bristle; interfrontal bristles in four pairs, nearly uniform in size, not cruciate; interfrontal setulæ in one pair, directly below anterior pair of interfrontal bristles; face fuscous, carinate, concave in profile, lower margin of epistome prominently curved upward; clypeus narrowly visible from in front; eyes rather small, occupying but little more than half the distance from mouth margin to vertex; cheeks, at vibrissal angle, half as high as eye, fuscous; buccæ with an up-curved bristle and numerous weak irregular setulæ; oral setulæ weak; antennæ fuscous; third joint quadrangular, much larger than second, with minute whitish pubescence; arista two and one-fourth times antennal length with long pubescence. Mesonotum broad; dorsocentral bristles in one pair; acrostichal setulæ numerous, rather long, not arranged in definite rows; posthumeral bristle absent; scutellum quadrangular, disc bare; marginal bristles four, the basal pair two-thirds as long as apical; pleural sutures pale brown, sternopleuræ fuscous, with a posterior bristle and two anterior setulæ. Legs fuscous; middle femora with a single anterior pre-apical seta, middle tibiæ with two flexor, one at middle and one at apex, and three extensor bristles, one before apex and two on apical third; hind tibiæ without macrochaetæ; hind metatarsi two-thirds as long as second joint. Wings hyaline; costa black, other veins brown; costa ending a little beyond third vein, second section one and one-third times third, basal section of third vein one-third as long as last section of second vein, shorter than penultimate section of fourth vein and one and two-thirds times outer crossvein; last section of third vein straight, ending

near wing-tip; discal cell long, short appendiculate. Abdomen short, cylindrical hairy; second segment two times third; hypopygium large. Length: 1.75 mm.

Type.—Male: Austin, Texas (Melander).

Paratypes.—Two specimens from the same collection.

Leptocera (*Scotophilella*) **venalicia** Osten Sacken. (Fig. 6).

Osten Sacken: Cat. N. Am. Dipt. 263 (*Borborus*).

Williston: Tran. Ent. Soc. Lond. 434 (1896). (*Borborus*).

Coquillett: Proc. U. S. N. M. XXII. 269 (1900). (*Limosina*).

Adams: Kans. Univ. Sci. Bull. III. (1905). (*Limosina*).

Eleven specimens from the following localities: Cuba: Havana (Baker). Haiti. Hawaii (Bryant). San Domingo (Johnson).

Leptocera (*Scotophilella*) **maculipennis**, new species. (Fig. 24).

Black subshining. Front convex, almost twice as broad as long, slightly gray dusted, with the divergent stripes, divided by the interfrontal stripes, forming a distinct velvety black M-shaped mark; extreme lower front reddish; bristles of head well developed; fronto-orbital bristles directed outward over eye and backward, the upper, one and one-half times as long as the lower; orbital setulæ weak; interfrontal bristles in three pairs, the anterior pair cruciate; one pair interfrontal setulæ present; cheeks and face gray pollinose; cheeks, from lower margin of eye to oral margin, one-third as high as eye; face deeply concave in profile; clypeus narrowly visible from in front; vibrissæ strong; oral setulæ strong; buccal setulæ increasing in size toward vibrissal angle, the last two pairs curved up and stronger than the others; third joint of antennæ oval; arista two and one-half times antennal length, short dense pubescent. Mesonotum short, broad, tapering posteriorly, convex; dorsocentral bristles in two pairs, the posterior pair slightly longer than the other; acrostichal setulæ in eight to ten irregular rows between anterior pair of dorsocentral bristles; posterior pair of middle acrostichals longer than the others; posthumeral bristles absent; scutellum triangular, margin with four long bristles and two basal setæ, the posterior pair of bristles almost twice as long as the others; pleural sutures brown to yellow, upper sternopleuræ with a single strong bristle. Legs fuscous, with coxa, trochanters, bases and apices of tibiæ and tarsi lighter; middle femora with a row of setæ on the anterior apical half, increasing in size toward apex, the last three becoming bristle-like; middle tibiæ with two flexor, one a little beyond middle and one at apex, and four extensor bristles, two at basal third and two strong, near apex; hind metatarsi two-thirds as long as second joint. Wings hyaline with brownish areas on the tips of the first, second and third veins and

at outer cross-vein; veins brown; costa black towards base, ending at third vein, first section setulose, equal to the second and one and one-fourth times third; basal section of third vein two-fifths as long as last section of second vein; basal section of third vein one and two-thirds times as long as the distance between crossveins and two times outer crossvein; last section of third vein curved up and ending considerably before wing-tip; fourth vein barely traceable on its last section; discal cell short appendiculate. Abdomen short, cylindrical; hypopygium large; second segment two times third. Halteres yellow. Length, 1-1.5 mm.

Type.—Male: Friday Harbor, Wash. (Melander).

Paratypes.—Four specimens from the following localities: Washington: Mt. Constitution (Melander). British Columbia: Lorvis Inlet (Kincaid). Alaska: Popoff Isl. (Kincaid).

Leptocera (*Scotophilella*) *robusta*, new species. (Fig. 9).

Subshining black. Front almost twice as broad as high, silvery pollinose on the orbital and interfrontal stripes and on the ocellar tubercle; frontal triangle and divergent stripes brownish black; interfrontal bristles in four pairs, the anterior two pairs long and cruciate; orbital setulæ minute, not extending above the upper fronto-orbital bristle; ocelli reddish; antennæ with third joint slightly larger than second, covered with whitish pubescence; arista two and one-half times as long as antennæ; face black, distinctly carinate, slightly concave in profile; eyes large; cheeks browned, one-fourth as high as eye when measured at vibrissal angle; oral vibrissæ very strong; buccal bristles strong. Mesonotum with two pairs of dorso-central bristles, the posterior pair much stronger than the anterior; acrostichal setulæ numerous, irregularly arranged; posterior pair of acrostichal bristles well developed; scutellum truncate, disc velvety black, margined with four strong bristles; pleuræ velvety black, sutures yellowish; posterior sternopleuræ bristle well developed, much longer than the anterior bristle. Legs black with tibiæ and tarsi brownish; front femora slightly incrassate with a row of hair-like bristles on both extensor and flexor surfaces; middle femora with a row of hair-like bristles and a stiff pre-apical bristle on anterior surface; middle tibiæ with extensor bristle well developed, apical bristle present; hind tibiæ long hairy; hind metatarsi half as long as following joint. Abdomen flat, oval, shorter than the thorax; second segment one and one-half times third. Halteres black. Wings as in Fig. 9. Length, 3 mm.

Type.—Female: La Suiza de Turrialba, Costa Rica, (Pablo Schild).

Paratype.—Female from same collection.

Leptocera (*Scotophilella*) **Xanthocephala**, new species. (Fig. 18).

Head entirely yellow; legs yellow with apex of front femora and front tibiæ black. Notum and abdomen shining black. Front flat, broader than high, uniformly yellow, ocellar area slightly browned; interfrontal bristles minute, in three pairs; orbital bristles distinct; antennæ divergent, not directed outward, third joint distinctly pubescent; arista two and one-half times antennal length, with long pubescence; face distinctly concave, mouth-margin curved up; cheeks narrow, one-sixth as high as long diameter of eye; eyes large. Mesonotum slightly convex; dorsocentral bristles weak, in two pairs; acrostichal setulæ minute; scutellum short triangular, marginal bristles four. Front femora swollen, with a row of hair-like bristles beneath; middle tibiæ with the extensor bristles rather weak but with a distinct apical bristle; hind femora with a distinct pre-apical bristle above; extensor surface of hind tibiæ with some hair-like bristles and with a long bristle near apex; first and second joint of hind tarsi thickened; hind metatarsi two-thirds as long as second joint. Wings slightly browned, venation as in Figure 18. Abdomen cylindrical; hypopygium small. Length, 1.5 mm.

Type.—Male: La Suiza de Turrialba, Costa Rica (Pablo Schild).

Allotype—Female from the same collection.

This species comes close to *palliceps* Johnson. According to Johnson's description of *palliceps*, the antennæ are brown and the middle and posterior femora black. In the species just described the antennæ and the middle and posterior femora are yellow. The brief description given by Johnson makes it rather difficult to place the species with certainty. As far as the writer can determine, the two species are quite distinct.

Leptocera (*Scotophilella*) **palliceps** Johnson.

Johnson: Psyche Vol. XXII. 22 (1915). (*Limosina*).
Clermont, N. J.

Leptocera (*Scotophilella*) **inconspicua** Malloch.

Malloch: Tran. Am. Ent. Soc. 40, 16 (1914).
Costa Rica.

Leptocera (*Scotophilella*) **parva** Malloch.

Malloch: Proc. U. S. N. M. 44. 371 (1913). (*Limosina*).
Malloch describes this species from Washington, D. C.
Seven specimens from Kalso, B. C., and Illinois (Melander).

Leptocera (*Scotophilella*) **concava**, new species. (Fig. 20.)

Shining black. Front slightly convex, two-thirds as deep as broad, opaque, gray pollinose; lower front with narrow margin reddish; fronto-orbital bristles widely divergent, the lower only half as long as upper; orbital setulæ weak, not extending above upper fronto-orbital bristle; interfrontal bristles in three pairs, the upper and lower pair very weak, the middle pair long and cruciate; interfrontal setulæ microscopic; face brown, carinate between antennæ, deeply concave near mouth margin, lower portion yellowish; clypeus narrowly visible from in front; cheek two-fifths as high as eye; buccal bristles absent; oral setulæ weak; antennæ with third joint reddish; arista three times antennal length, short pubescent. Mesonotum short and broad, glossy black; dorsocentral bristles in two pairs, the posterior pair more than twice as long as anterior; discal setulæ in six rows between anterior pair of dorsocentral bristles; scutellum quadrangular; marginal bristles four; sternopleuræ with a posterior bristle and anterior seta. Legs with front coxa, bases and apices of femora and tibiæ and tarsi yellowish; front coxa reddish; middle femora with three anterior preapical bristles; middle tibiæ with six extensor, one before middle and three small and two large on apical third; hind metatarsi one-half as long as second joint. Wings slightly browned, veins brown; costa produced to wing-tip and beyond third vein, first section setulose, equal to second, second heavy, darker, two-thirds as long as third; last section of second vein, concave on posterior side, two and one-half times as long as basal section of third vein; distance between crossveins, two times outer crossvein and one and one-fourth times basal section of third vein; third vein slightly curved up on its last section, ending considerably before wing-tip; fourth vein not reaching wing-tip; discal cell long appendiculate. Abdomen glossy black, very long and broad; segments subequal or nearly so. Halteres black with yellow stem. Length, 2.5 mm.

Type.—Female, Stanford U. Calif. Jan. 28, 1906.

Paratypes.—Eleven specimens distributed as follows: Washington: Pullman (Melander). California: Stanford U. (Melander): Redwood Canon (Cresson): Eureka (Barber): Santa Cruz, Alameda (Coquillett).

Leptocera (*Scotophilella*) **perparvi** Williston.

Williston: Tran. Ent. Soc. Lond. 433. Pl. XIV. (1896) (*Limosina*).

Described from St. Vincent, W. I.

Leptocera (*Scotophilella*) **pallicornis** Malloch.

Malloch: Tran. Am. Ent. Soc. 40, 15 (1914).
Costa Rica.

Leptocera (*Scotophilella*) **nasuta**, new species. (Fig. 23.)

Opaque black. Front convex, longer than broad, setigerous stripes and ocellar triangle slightly gray dusted; divergent stripes velvety black; bristles of head reduced; interfrontal bristles in five pairs, uniform in size; fronto-orbital bristles divergent, directed outward, the lower slightly weaker than the upper; orbital setulæ present, minute, not extending above the upper fronto-orbital bristle; antennæ divergent; third joint but little longer than second, with whitish pubescence; arista two times antennal length, its pubescence short and dense; face carinate, concave in profile, gray pollinose; clypeus narrowly visible from in front; cheek, from lower margin of eye to mouth margin, half as high as eye; buccal setulæ hair-like, two in number, the anterior pair longer, upcurved; oral setulæ few. Mesonotum short and broad, disc convex; acrostichal setulæ numerous, arranged in eight rows between the anterior pair of dorsocentral bristles; dorsocentral bristles in one pair; sternopleuræ with a single anterior hair-like bristle; scutellum triangular; marginal bristles four, the anterior pair much weaker than the other. Legs short, hairy; middle femora with a single preapical anterior seta; middle tibiæ with the usual flexor and extensor bristles; hind metatarsi incrassate, three-fourths as long as second joint. Wings brown; veins fuscous; marginal cell broad; costa produced beyond third vein, first section equal to second and three-fourths as long as third; last section of third vein with a gentle curve like letter S; penultimate section of fourth vein slightly longer than penultimate section of third vein and one and one-half times outer crossvein; fourth vein traceable to wing-margin; outer angle of discal cell rounded. Abdomen broad, in female, cylindrical in male, almost bare; second segment elongated, equal to the next two. Halteres fuscous. Length, 1.25 mm.

Type.—Male: Pullman, Wash. May 19, 1912 (Melander).

Paratypes.—Four specimens from: Washington: Lake Whatcom, Pullman and Almota (Melander). Idaho: Potlatch (Melander).

(To be continued)